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Conference Abstract

A Collective Effort to Update the Legume Checklist

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Abstract

Taxonomic names are critical to the communication of biodiversity—they link data together whether it be distribution data, traits or phylogeny. Large taxonomic groups, such as many plant families, are globally distributed as is the taxonomic expertise of the family. A growing knowledge base requires collaboration to develop an up-to-date checklist as a research foundation. The legume (Fabaceae) community has a strong history of collaboration including the International Legume Database and Information Service (ILDIS), which curated the names but ILDIS is no longer up to date. In 2020, under the umbrella of the Legume Phylogeny Working Group (LPWG), a group of taxonomists began updating the legume taxonomy as part of a larger collaboration around a legume data portal.

Currently the World Checklist of Vascular Plants (WCVP) is the most up-to-date reference and was used as the starting point for the project. The workflow begins with over 80 volunteer taxonomic experts updating the checklist in their specialty area. These lists are manually collated, centrally creating a consensus taxonomy with synonyms. Any taxonomic conflicts are adjudicated within the group. The checklist then undergoes a comprehensive nomenclature assessment at Royal Botanic Gardens, Kew and becomes part of the

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WCVP. This checklist was submitted to the Catalogue of Life Checklist Bank and is integrated as the preferred legume checklist in the GBIF taxonomic backbone.

After one round of taxonomic curation, 38% of the legume names in GBIF (Global Biodiversity Information Facility), which were previously unmatched to WCVP, are now connected to GBIF names, therefore also improving the occurrence records of those species. The GBIF taxonomic backbone contains names found on herbarium specimens and in the literature, which are not currently part of the legume expert community checklist or WCVP. This list of unresolved names will be forwarded to the legume community for curation, thereby developing a cycle of data improvement. It is anticipated that after a few rounds of expert curation, the WCVP and GBIF taxonomies will converge. At each cycle, a snapshot of GBIF occurrences is taken and the improvement of the occurrences is quantified to measure the value of the expert taxonomic work. The current checklist is also available via Catalogue of Life and soon via the World Flora Online to support research. In this talk, we describe the workflow and impact of the expert curated legume taxonomy.

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